State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #_____
HRI #_____
Trinomial_____
NRHP Status Code_____
Other Listings_____
Review Code_____ Reviewer_____ Date_____

 Resource name(s) or number(assigned by recorder) N-227A

P1. Other Identifier: 11' Transonic Wind Tunnel, Unitary Plan Wind Tunnel
***P2. Location:** ☒Not for Publication ☐Unrestricted ***a. County** Santa Clara
***b. USGS 7.5' Quad** San Francisco North, Calif. **Date:** 1995
***c. Address** 365 Boyd Rd. **City** Moffett Field **Zip** 94035
***e. Other Locational Data:**

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries.)
N-227A is connected to the east side of Building N-227 and provides the connection to the 11' Transonic Wind Tunnel. The street façade of N-227A is unpainted concrete and two stories in height. Ribbon windows on the street façade run along the first floor and align with the windows of N-227. Except for the street façade, the remainder of the building is clad with metal panels and is three stories in height to accommodate the wind tunnel. The building has a flat roof. The wind tunnel connection occurs at the southwest corner of the building.

See Continuation Sheets for technical description of the 11-ft x 11-ft Transonic Wind Tunnel. Also refer to DPR 523 Form A for Building N-227, N-227B and N-227C

This building appears to be in fair - good condition.

***P3b. Resource Attributes:** (list attributes and codes) HP39 – Other (Wind Tunnel)

***P4. Resources Present:** ☒Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other

P5a. Photo

P5b. Photo: (view and date)
View of northeast façade, (8/12/05)

***P6. Date Constructed/Age and Sources:** 1955

***P7. Owner and Address:**
United States of America as represented by National Aeronautics and Space Administration (NASA)

***P8. Recorded by:**
Page & Turnbull, Inc.
724 Pine Street
San Francisco, CA 94108

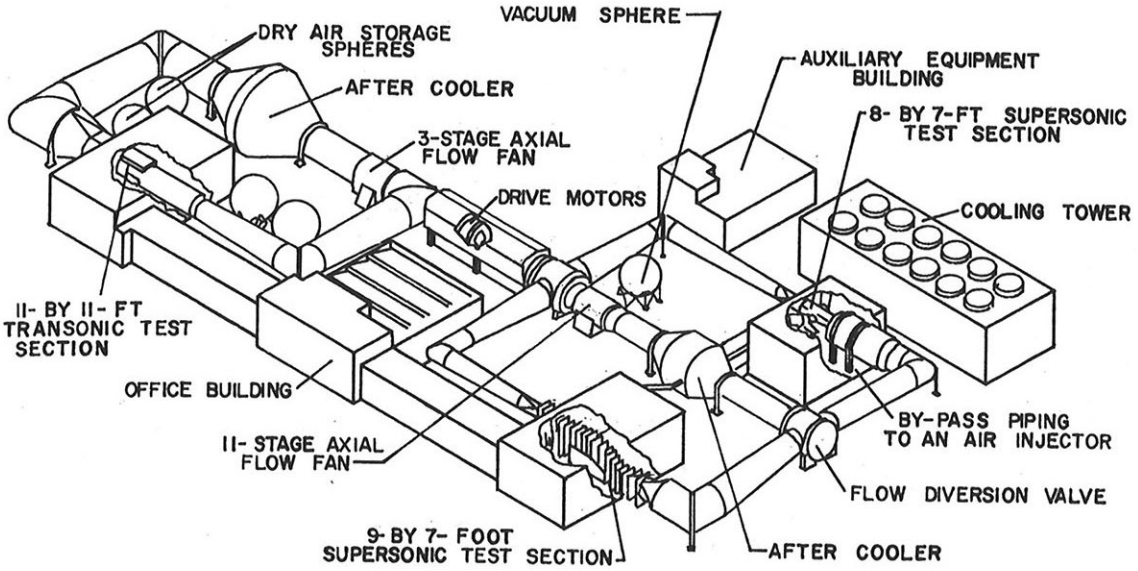
***P9. Date Recorded:** 08/12/05

***P10. Survey Type:**
Reconnaissance

***P11. Report Citation:** National Aeronautics and Space Administration, *Technical Facilities Catalog*, Volume 1, publication NHB 8800.5A (1), October 1974; Technical Information Division, Ames Research Center, *Ames Research Facilities Summary,* 1974; Donald D. Baals and William R. Corliss, *Wind Tunnels of NASA,* NASA SP-440, 1981.

***Attachments:** ☐None ☐Location Map ☐Sketch Map ☒Continuation Sheet ☐Building, Structure, and Object Record
☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (list)

N 227A



DESCRIPTION

The 11-ft x 11-ft transonic wind tunnel is a closed-return, variable-density tunnel with an 11-ft-square test section. It has an adjustable nozzle with 2 flexible walls and a slotted test section to permit transonic testing. The air is driven by a 3-stage, axial-flow compressor powered by 4 wound-rotor induction motors. The same motors, with a different compressor, drive the 9-ft x 7-ft and the 8-ft x 7-ft supersonic wind tunnels. (See the following 2 resumes.) The speed of the motors is continuously variable over the operating range. The motors have a combined output of 180,000 hp for continuous operation, or 216,000 hp for one hr.

CHARACTERISTICS

Mach Number:	0.5 to 1.4, continuously variable
Reynolds Number, per ft:	1.7×10^6 to 9.4×10^6
Stagnation Pressure, atm:	0.5 to 2.25
Stagnation Temperature:	580°R
Test-Section Height, ft:	11.0
Test-Section Width, ft:	11.0
Test-Section Length, ft:	22.0
Test-Section Access Hatch, ft:	7.0 wide x 22.0 long, on top of tunnel

6a. ELEVEN-BY ELEVEN-FOOT WIND TUNNEL

DESCRIPTION:

The Eleven-by Eleven-Foot Transonic Wind Tunnel is a closed-return, variable density tunnel with a fixed geometry, ventilated throat and a single-jack flexible nozzle. Airflow is produced by a three-stage, axial-flow compressor powered by four wound-rotor variable-speed induction motors.

For conventional steady-state testing models are generally supported on a sting. Internal strain-gage balances are used for measuring forces and moments. (Additional facilities are available for measuring multiple steady or fluctuating pressures.)

A schlieren system is available for studying flow patterns by direct viewing or photography, as well as a system for obtaining 20-by 40-inch shadowgraph negatives.

PERFORMANCE:

Mach Number	0.4 to 1.4 (continuously variable)
Stagnation Pressure	0.5 to 2.25 atmospheres
Reynolds Number	1.7×10^6 to 9.4×10^6 per foot
Stagnation Temperature	580° R

DIMENSIONS: Test Section

Height	11.0 feet
Width	11.0 feet
Length	22.0 feet
Access	Top hatch — 7.0 × 22.0 feet

STATUS:

Operational since 1956

JURISDICTION:

Aeronautics Division
Experimental Investigations Branch
Stuart Treon

LOCATION:

Building N-227A